

The opinion in support of the decision being entered today  
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* STEPHEN F. GASS and J. DAVID FULMER

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Appeal 2007-0773  
Application 10/053,390  
Technology Center 3700

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Decided: September 27, 2007

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Before WILLIAM F. PATE, III, TERRY J. OWENS, and JENNIFER D. BAHR,  
*Administrative Patent Judges.*

PATE, III, *Administrative Patent Judge.*

DECISION ON APPEAL

This is an appeal from the Final Rejection of claims 1 and 24-29. Claims 2-8 and 21-23 stand withdrawn from consideration. Claims 9-20 were canceled. Thus, claims 1 and 24-29 are before us for appeal.

We have jurisdiction under 35 U.S.C. §§ 134 and 6.

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The claimed invention is directed to a method for detecting accidental contact between a person and a dangerous woodworking machine. Claim 29, reproduced below, is further illustrative of the claim subject matter.

29. A method for detecting accidental contact between a person and a dangerous portion of a woodworking machine, the method comprising:

- providing a first electrode electrically coupled to the person;
- providing a second electrode electrically coupled to the dangerous portion;
- transmitting a signal by one of the first or second electrodes;
- receiving the transmitted signal by the other of the first or second electrodes; and
- performing a step of sampling the signal a plurality of times to determine if the signal has at least one predetermined characteristic indicative of contact between a person and the dangerous portion.

The references of record relied upon by the Examiner as evidence of obviousness are:

Friemann	US 3,858,095	Dec. 31, 1974
Kashioka	US 5,921,367	Jul. 13, 1999
Hokodate	US 6,150,826	Nov. 21, 2000

Claims 1, 24, and 29 stand rejected under 35 U.S.C. § 103 as unpatentable over Friemann in view of Kashioka.

Claims 25-28 stand rejected under 35 U.S.C. § 103 as unpatentable over Friemann in view of Kashioka and Hokodate.

## ISSUES

Inasmuch as the Examiner has withdrawn the rejection under § 112, the sole issue for our consideration is the obviousness rejections of claims 1 and 24-29 under § 103.

## FINDINGS OF FACT

Friemann discloses an electrically powered band cutter. See col. 1, ll. 44-47. The band cutter is provided with a protective circuit that can stop the band in approximately 1/200<sup>th</sup> of a second. See col. 2, ll. 15-23. With reference to Fig. 2, Friemman discloses three insulated rollers 6, 7, and 8 and an insulated drive pulley 9 connected to motor M. The endless band cutter 5 is mounted for rotation on the rollers and the pulley. Two conductive take off rollers 12 are provided on the machine but are electrically insulated from it. See col. 3, ll. 7-13. When the operator touches the band cutter the capacitance of the cutter and contact system is changed, and the change in the capacitance is detected by the bridge circuit shown in Fig. 3. See col. 3, ll. 21-33. Friemann selects a protection system using contact between the operator and the cutter rather than the proximity system in the prior art so that the machine does not continually interrupt the cutting when the worker is near the cutting band 5. See col. 1, ll. 35-41.

Kashioka discloses a safety device for a kneading machine which uses rolls 12 to mix and knead rubber. See col. 1, ll. 4-7. The worker A, who conducts the

kneading work, charges the rubber material B, into rolls 12 where the raw materials are mixed. See col. 1, ll. 35-38. When the worker's hand reaches into the gap between the rolls 12 during the charging of the rubber material, there is a danger that the hand may be caught in the rotation and squeezed into the narrow gap. See col. 1, ll. 57-67. In order to prevent this, Kashioka discloses several embodiments. These embodiments use capacitance, infrared radiation, spectrum measurements, polarization of light, and other detectors to prevent injury to the operator. For example, the embodiment in Fig. 1 uses a capacitance sensor 1 and a rod-like bar electrode 2 to sense the presence of the operator's hand. See col. 8, l. 57 – col. 9, l. 4. The capacitance sensor 1 supplies the detected electrostatic charge to a judging circuit 3, which determines whether the detected capacitance exceeds a predetermined value. See col. 9, ll. 5-8. The judging circuit then controls the drive unit 11a to stop the rolls 12. Contrary to the findings of the Examiner, we do not find any sampling in this description of the Fig. 1 embodiment of Kashioka. The passage that the Examiner points to is col. 9, ll. 1-62. This appears to describe a system in which the capacitance is continually sensed by the sensor 1, and the judging circuit continuously compares the detected capacitance to a predetermined value. We further note that in Kashioka there is no disclosure of an electrode coupled to the operator A.

Hokodate discloses distance detectors for a laser beam cutter. See col. 3, ll. 46-52. The purpose of these detectors is to provide a constant and reliable distance measurement from the focal point and the nozzle of the cutter. See col. 1, ll. 24-34. In the prior art, the distance measurement could return spurious signals due to

plasma or spatter generated during the laser cutting. Hokodate discloses using an input signal generator 15, supplying either an alternating current or an alternating voltage to a detector surrounding the laser beam. The input signal generator signal is of a pure sinusoidal wave of a specific frequency. Since this is the case, harmonics or high frequencies can be recognized and easily distinguished, thereby heightening reliability in the distance measurement. See col. 4, ll. 33-41.

#### PRINCIPLES OF LAW

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966), the Supreme Court set out a framework for applying the statutory language of § 103:

[T]he scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." *Id.*, at 17-18, 148 USPQ at 467.

While the sequence of these questions might be reordered in any particular case, the factors continue to define the inquiry that controls. If a court, or patent examiner, conducts this analysis and concludes the claimed subject matter was obvious, the claim is invalid or unpatentable under § 103. *See KSR Int'l v. Teleflex*

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*Inc.*, 127 S.Ct. 1727, 1734, 82 USPQ2d 1385, 1388 (2007). To facilitate review this analysis should be made explicit. *KSR* at 1741, 82 USPQ2d at 1396. It can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed invention does. This is so because inventions in most, if not, all cases rely upon building blocks long since uncovered. *KSR* at 1741, 82 USPQ2d at 1396.

## ANALYSIS

We will not sustain the obviousness rejections on appeal. In the first place, none of the cited references teach the steps of providing the first electrode, electrically coupled to the person using the machine. We acknowledge the Examiner has argued that the ground can be considered an electrode in the operation of the device of Friemann. Answer, page 11. We disagree. The ground is merely the electrical potential that forms a baseline for the capacitance changes in the circuit which comprises the saw blade 5 and the take-off rollers 12. The independent claims on appeal require transmitting a signal from one of the electrodes. The ground cannot be considered as either detecting the signal or transmitting the signal. Accordingly, the Examiner's argument that Friemann discloses an electrode electrically coupled to the person is not credited.

Secondly, as noted above, we are unable to state to a preponderance of the evidence that the Kashioka reference discloses sampling. We have studied the disclosure of Kashioka and particularly the disclosure of col. 9 and we agree with

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the Examiner that Kashioka could use digital techniques of sampling in the input to the judging circuit. However, it seems clear that analog detection is also comprehended by the disclosure of col. 9, as Appellants argue on page 21 of the Brief.

Finally, we are in the agreement with the Appellants, that the limitation of claim 1, of a plurality of samplings within 200 microseconds, has not been shown to be a result effective variable. In order to be deemed a result effect variable, there has to be some recognition in the art that the variable is result effective. As Appellants argue, there is no indication in any cited reference that any variable has been identified that when optimized may be used to indicate contact between a person and a woodworking machine. Therefore, the limitation directed to sampling within 200 microseconds cannot be deemed a result effective variable.

#### CONCLUSION AND ORDER

For the foregoing reasons, it is our determination that the Examiner has not established the *prima facie* obviousness of claims 1 and 24-29. The rejections on appeal are reversed.

REVERSED

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